

In the Claims:

Following is a complete set of claims as amended with this Response.

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1. (Currently Amended) A method of processing video data comprising the steps of:
accepting video frame data from a video source; [and]
accepting [storing] video information regarding [associated with] the video frame data [as the video data is being accepted,];
comparing a current state of the video information with gathered video information regarding the video frame data;
determining differential information based on the comparing; and
storing the differential information [the video information being stored] as annotations to the video frame data.
 2. The method of claim 1, wherein the video information comprises camera geometry information.
 3. The method of claim 1, wherein the video information comprises camera pose information.
 4. The method of claim 1, wherein the video information comprises source identification/description/illumination information.
 5. The method of claim 1, wherein the video frame data comprises images obtained from a camera [frame data obtained from an encoder].
 - 6-7. (Canceled)
 8. (Currently Amended) The method of claim 1, wherein comparing comprises [7, further comprising] comparing a [the] current state with [the] camera

geometry information, [the] camera pose information and [the] source identification/description/illumination information of the video frame data.

9. (Canceled)

10. (Currently Amended) The method of claim 1, wherein storing comprises [9, further comprising] appending the differential information to the video frame data.

11. (Currently Amended) An apparatus comprising:

a video source to generate video frame data;

a collector configured to collect video information to be associated with the video frame data [gathered from a video source]; [and]

a comparator to compare a current state of the collected video information with collected video information;

a differential generator to determine differential information based on the comparison; and

an annotator coupled to the differential generator [collector, the annotator configured] to annotate the video frame data with the differential [video] information.

12. The apparatus of claim 11, wherein the video information comprises one or more of: camera geometry; camera pose information; and source identification/description/illumination information.

13. (Currently Amended) The apparatus of claim 12, further comprising calibration software configured to generate the camera geometry information for the video frame data as the video frame data is being gathered by the video source and provide the generated camera geometry information to the collector.

14. (Currently Amended) The apparatus of claim 12, further comprising pose estimation software [and] configured to generate the camera pose information for the video frame data as the video frame data is being gathered by the video source and provide the generated camera pose information to the collector.

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15. (Currently Amended) The apparatus of claim 12, further comprising an encoder coupled to the differential generator configured to encode the differential information [video data and generate frame data] as an input to the annotator.

16. (Currently Amended) The apparatus of claim 15, wherein the encoder forwards a current state of the video information [frame data] to a state storage device coupled to the encoder.

17-19. (Canceled)

20. (Currently Amended) The medium [computer readable media] of claim 29 [19], wherein the video information is camera geometry information.

21. (Currently Amended) The medium [computer readable media] of claim 29 [19], wherein the video information is camera pose information.

22. (Currently Amended) The medium [computer readable media] of claim 29 [19], wherein the video information is source identification/description/illumination information.

23. (Canceled)

24. (Currently Amended) The medium [computer readable media] of claim 29 [19], wherein the video source is a video capture device.

25-27. (Canceled)

28. (Currently Amended) The medium [computer readable media] of claim 29 wherein the instructions for storing comprise instructions which, when executed by the machine, cause the machine to perform further operations comprising [27, further comprising] appending the differential information to the video frame data.

29. (New) A machine-readable medium having stored thereon data representing instructions which, when executed by a machine, cause the machine to perform operations comprising:

accepting video frame data from a video source;

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accepting video information regarding the video frame data;
comparing a current state of the video information with gathered video
information regarding the video frame data;
determining differential information based on the comparing; and
storing the differential information as annotations to the video frame data.

30. (New) An annotated video bitstream comprising:
video image data; and
video processing data regarding the video image data, annotating the video image
data, for subsequent video processing.

31. (New) The bitstream of Claim 30, wherein the video processing data
comprises camera pose information, camera geometry information and source
identification information.

32. (New) The bitstream of Claim 31, wherein the camera geometry
information is defined by a camera projection matrix.

33. (New) The bitstream of Claim 30, wherein the video processing data
comprises information for constructing three-dimensional models of objects in a scene of
the video image data.

34. (New) The bitstream of Claim 30, wherein the video processing data
comprises a three-dimensional scene model of objects in a scene of the video image data.

35. (New) The bitstream of Claim 30, wherein the video processing data
comprises differential information indicating differences between video processing data
for successive video image frames.

36. (New) The bitstream of Claim 30, wherein the video processing data is
present only for video image frames for which differential information exists.